

2/7/18 "An eye for an eye only ends up making the whole world blind."-Gandhi

HW: "2017 A2 L49 Transformations" #1 and 3
Test 1 on Thursday 2/15

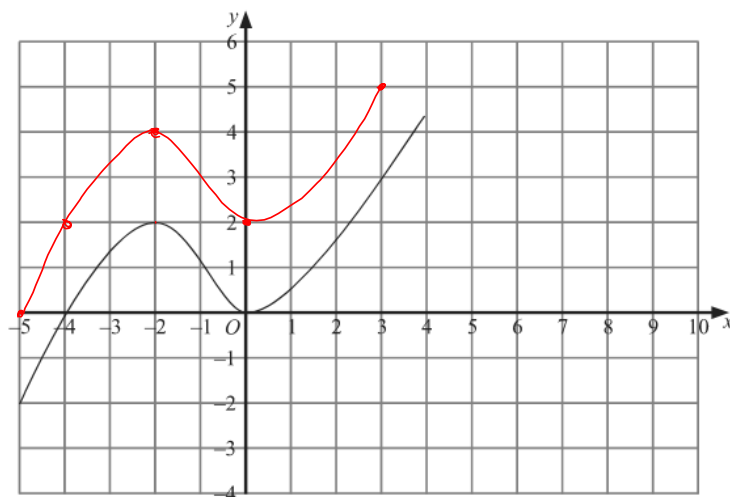
AIM: Transformations

Warm Up:

1. The graph of $y = f(x)$ is shown on the grids.

(a) On this grid, sketch the graph of $y = f(x) + 2$

up 2

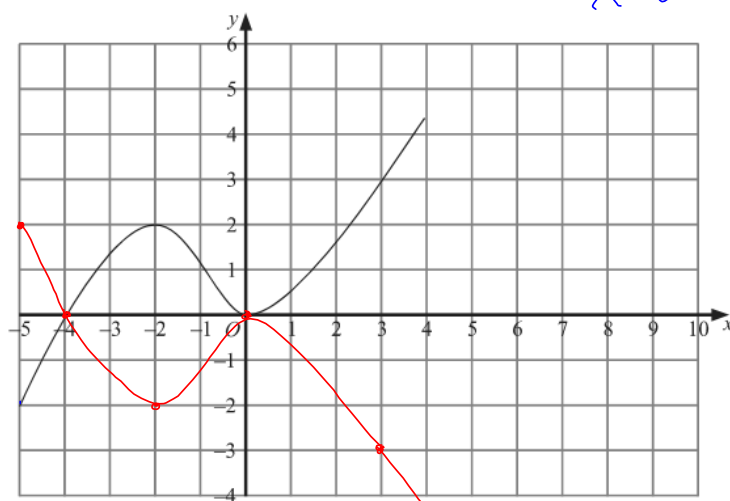


(2)

(b) On this grid, sketch the graph of $y = -f(x)$

reflect over x-axis

$f(x)$
 $(-5, -2)$
 $(-4, 0)$
 $(-2, 2)$
 $(0, 0)$
 $(3, 3)$

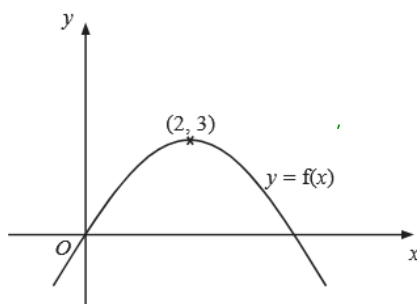


$-f(x)$
 $(-5, 2)$
 $(-4, 0)$
 $(-2, -2)$
 $(0, 0)$
 $(3, -3)$

(2)

(4 marks)

2.



The diagram shows part of the curve with equation $y = f(x)$.
The coordinates of the maximum point of this curve are $(2, 3)$.

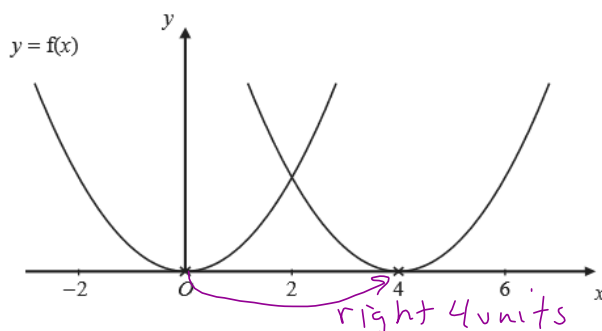
Write down the coordinates of the maximum point of the curve with equation

(a) $y = f(x - 2)$
right 2 $(2, 3)$
 $\begin{array}{r} (2, 3) \\ + 2 \\ \hline 4, 3 \end{array}$ (\dots, \dots) (1)

(b) $y = 2f(x)$
 $(2, 3)$
 $\begin{array}{r} (2, 3) \\ \times 2 \\ \hline (2, 6) \end{array}$ (\dots, \dots) (1)

(2 marks)

3.



The curve with equation $y = f(x)$ is translated so that the point at $(0, 0)$ is mapped onto the point $(4, 0)$.

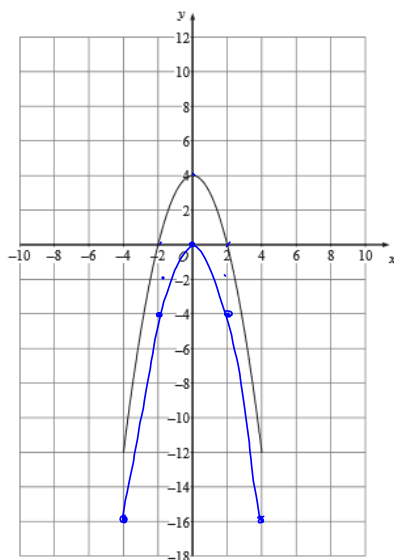
Find an equation of the translated curve.

$$y = f(x - 4)$$

(2 marks)

4. The graph of $y = f(x)$ is shown on the grids.

(a) On this grid, sketch the graph of $y = f(x) - 4$ ← down 4

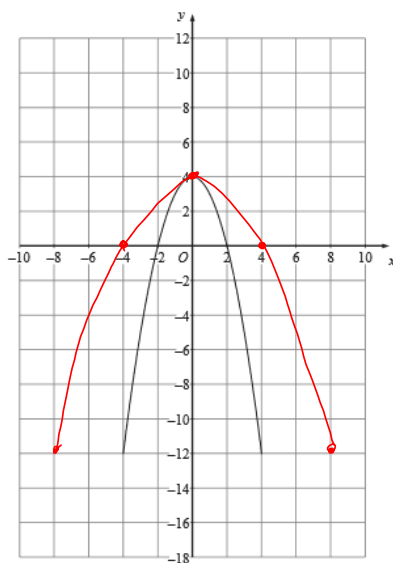


(2)

(b) On this grid, sketch the graph of $y = f\left(\frac{1}{2}x\right)$.

multiply
x-values
by 2

$f(x)$
 $(0, 4)$
 $(2, 0)$
 $(-2, 0)$
 $(-4, -12)$
 $(4, -12)$



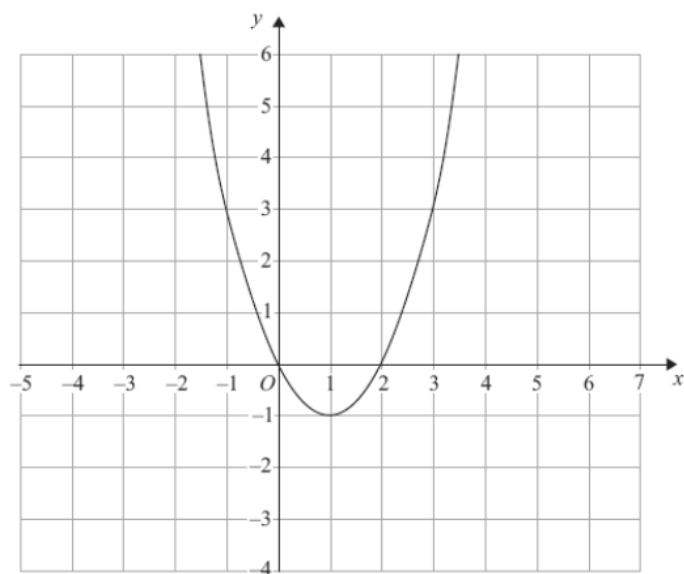
$f\left(\frac{1}{2}x\right)$
 $(0, 4)$
 $(4, 0)$
 $(-4, 0)$
 $(-8, -12)$
 $(8, -12)$

(2)

(4 marks)

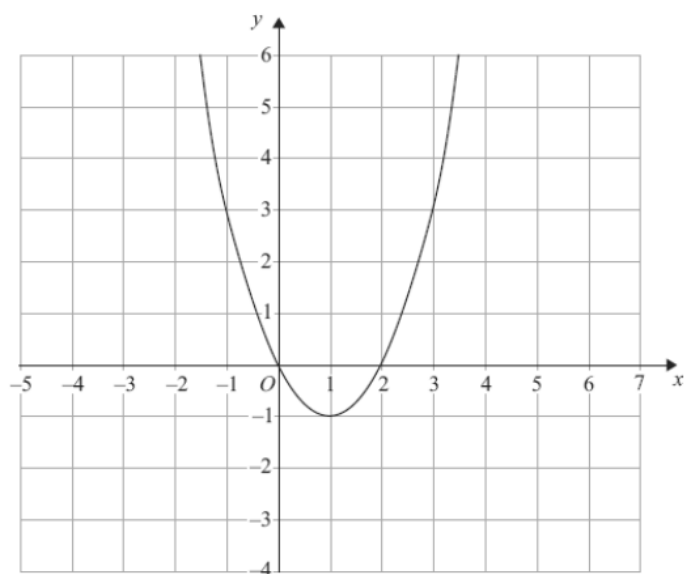
5. The graph of $y = f(x)$ is shown on each of the grids.

(a) On this grid, sketch the graph of $y = f(x - 3)$



(2)

(b) On this grid, sketch the graph of $y = 2f(x)$

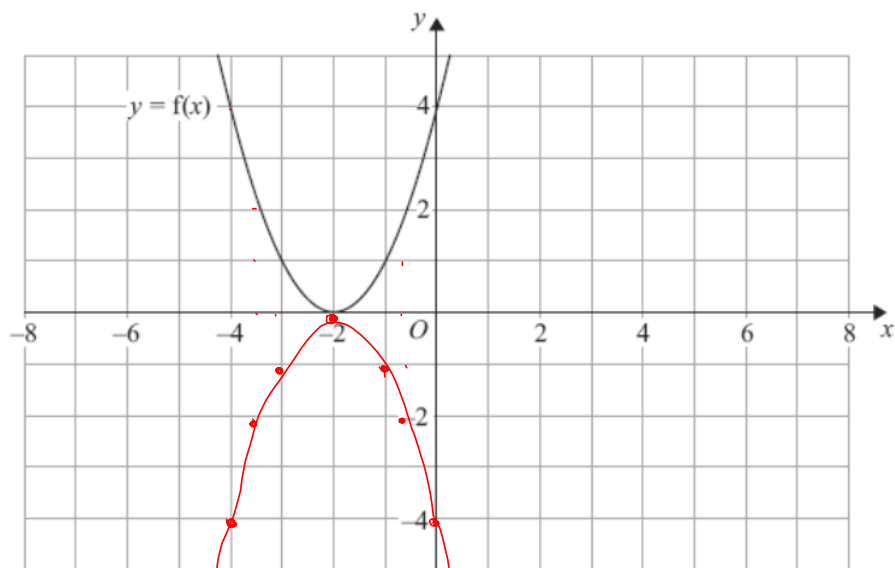


(2)

(4 marks)

6. $y = f(x)$

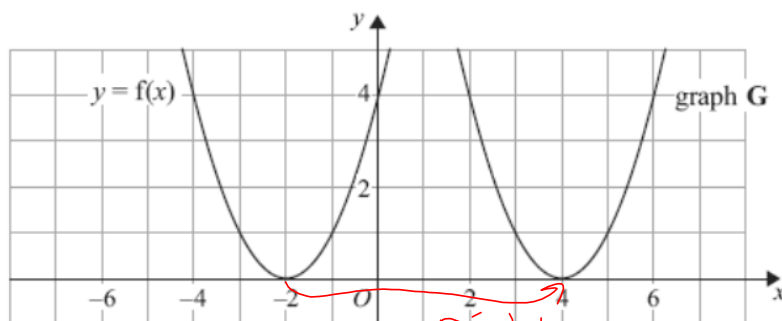
The graph of $y = f(x)$ is shown on the grid.



- (a) On the grid above, sketch the graph of $y = -f(x)$. ← reflect over x-axis

(2)

The graph of $y = f(x)$ is shown on the grid.



The graph **G** is a translation of the graph of $y = f(x)$.

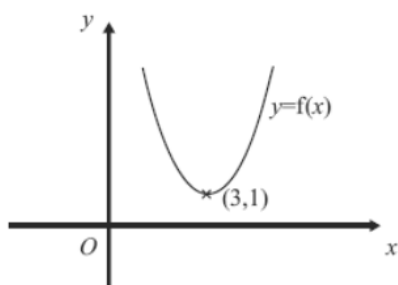
- (b) Write down the equation of graph **G**. finish start

$$y = f(x - 6)$$

(2)

(4 marks)

7.



The diagram shows part of the curve with equation $y = f(x)$.
The coordinates of the minimum point of this curve are $(3, 1)$.

Write down the coordinates of the minimum point of the curve with equation

(a) $y = f(x) + 3$

(1)

(.....,)

(b) $y = f(x - 2)$

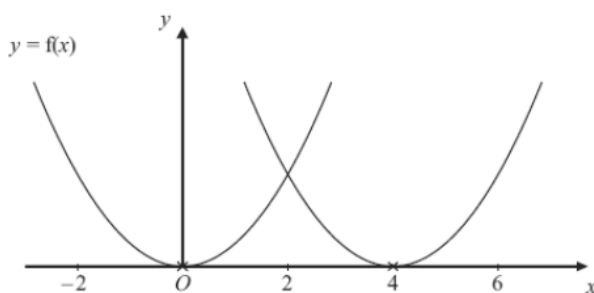
(1)

(.....,)

(c) $y = f\left(\frac{1}{2}x\right)$

(.....,)

8.

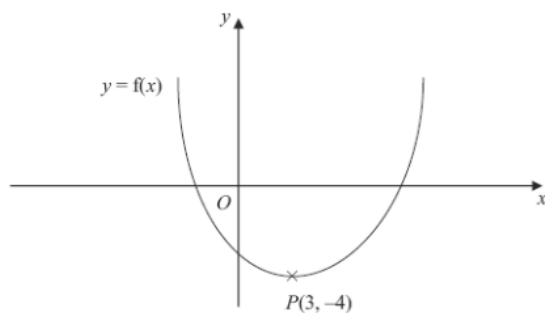


The curve with equation $y = f(x)$ is translated so that the point at $(0, 0)$ is mapped onto the point $(4, 0)$.

Find an equation of the translated curve.

.....

9. This is a sketch of the curve with the equation $y = f(x)$.
The only minimum point of the curve is at $P(3, -4)$.



- (a) Write down the coordinates of the minimum point of the curve with the equation $y = f(x - 2)$.

(..... ,)

- (b) Write down the coordinates of the minimum point of the curve with the equation $y = f(x + 5) + 6$

(..... ,)
